

DROP-IN TDA – INTERNALLY THREADED SLEEVE ANCHOR

Features:

- Deformation controlled fixing
- Approved for use in non-cracked concrete
- Approved for structural applications in non-cracked concrete
- Lipped and smooth versions

Benefits:

- Quick and simple installation
- One anchor for concrete from C20/25 to C50/60
- Suitable for bolts and threaded rod
- Adjustable fixture thickness
- Bolt and stud can be removed for temporary structures



Base material:

Non-cracked concrete from C20/25 to C50/60



ETA 20/0153 for M12 + M16 only

TDA anchor designation			
Trutek Drop-in Anchor	Thread size d [mm]	Short version	Lipped version
TDA	08	LS	L

Product Range

		Thread Diameter	Outside Diameter	Anchor Length	Internal Thread Length	Drill Hole Diameter	Drill Hole Depth	Fixture Clearance Hole	Installation Torque (Max)	Setting Punch
Product Code		d	D	L	L _{th}	d _o	h _{nom}	d _r	T _{inst}	Reference
Smooth	Lipped	mm	mm	mm	mm	mm	mm	mm	Nm	
TDA08	TDA08L	8	10	30	13	10	33	9	8	TDST08
TDA10	TDA10L	10	12	40	17	12	43	12	15	TDST10
TDA12	TDA12L	12	15	50	21	15	54	14	35	TDST12
TDAD12	TDAD12L	12	16	50	21	16	54	14	35	TDST12
TDA16	TDA16L	16	20	65	30	20	70	18	60	TDST16
TDA20	TDA20L	20	25	80	30	25	85	22	120	TDST20

Installation Data

Thread Diameter		M08	M10	M12	M12D	M16	M20	
Non-cracked concrete								
Effective Anchorage Depth	h _{ef}	[mm]	30	40	50	50	65	80
Minimum Concrete Thickness	h _{min}	[mm]	100	100	100	100	120	160
Characteristic Spacing	S _{cr,N,ucr}	[mm]	210	280	350	350	455	560
Characteristic Edge Distance	C _{cr,V,ucr}	[mm]	105	140	175	175	227	280
Minimum Spacing	S _{min}	[mm]	41	54	68	68	88	108
Minimum Edge Distance	C _{min}	[mm]	41	54	68	68	88	108

Steel Limits

Characteristic Tensile Steel limits

Thread Diameter			M08	M10	M12	M12D	M16	M20
Grade 4.8	$N_{Rk,s}$	[kN]	14.6	23.2	33.7	33.7	62.8	98.0
Partial Safety Factor	M_{sN}	[-]	1.5					
Grade 5.8	$N_{Rk,s}$	[kN]	18.3	29.0	42.2	42.2	78.5	122.5
Partial Safety Factor	M_{sN}	[-]	1.5					
Grade 8.8	$N_{Rk,s}$	[kN]	29.3	46.4	67.4	67.4	125.6	196
Partial Safety Factor	M_{sN}	[-]	1.5					

Characteristic Shear Steel limits

Shear - without lever arm								
Grade 4.8	$V_{Rk,s}$	[kN]	7.3	11.6	16.9	16.9	31.4	49.0
Grade 5.8	$V_{Rk,s}$	[kN]	9.2	14.5	21.1	21.1	39.3	61.3
Grade 8.8	$V_{Rk,s}$	[kN]	14.6	23.2	33.7	33.7	62.8	98
Factor of Ductility	k_7	[-]	0.8					

Shear - with lever arm

Grade 4.8	$M_{Rk,s}^0$	[Nm]	15.0	29.9	52.4	52.4	133.3	259.8
Grade 5.8	$M_{Rk,s}^0$	[Nm]	18.8	37.4	65.6	65.6	166.6	324.8
Grade 8.8	$M_{Rk,s}^0$	[Nm]	30.0	59.9	104.9	104.9	266.6	519.7
Partial Safety Factor	M_{sV}	[-]	1.25					

Fire Loads

Characteristic Tensile Resistance for Fire Loads

Thread Diameter			M08	M10	M12	M12D	M16	M20
$N_{Rk,s,fi,30}$	R30	[kN]	-	-	1.7	1.7	3.1	-
$N_{Rk,s,fi,60}$	R60	[kN]	-	-	1.3	1.3	2.40	-
$N_{Rk,s,fi,90}$	R90	[kN]	-	-	1.1	1.0	2.0	-
$N_{Rk,s,fi,120}$	R120	[kN]	-	-	0.8	0.8	1.6	-

Characteristic Shear Resistance without lever arm for Fire Loads

Thread Diameter			M08	M10	M12	M12D	M16	M20
$V_{Rk,s,fi,30}$	R30	[kN]	-	-	1.7	1.7	3.1	-
$V_{Rk,s,fi,60}$	R60	[kN]	-	-	1.3	1.3	2.4	-
$V_{Rk,s,fi,90}$	R90	[kN]	-	-	1.1	1.1	2.0	-
$V_{Rk,s,fi,120}$	R120	[kN]	-	-	0.8	0.8	1.6	-

Characteristic Shear Resistance with lever arm for Fire Loads

Thread Diameter			M08	M10	M12	M12D	M16	M20
$M_{Rk,s,fi,30}^0$	R30	[Nm]	-	-	3.9	3.9	9.3	-
$M_{Rk,s,fi,60}^0$	R60	[Nm]	-	-	2.9	2.9	7.0	-
$M_{Rk,s,fi,90}^0$	R90	[Nm]	-	-	2.5	2.5	6.0	-
$M_{Rk,s,fi,120}^0$	R120	[Nm]	-	-	1.9	1.9	4.6	-

In the absence of other national regulations the partial safety for resistance under fire exposure = 1.0

Load Data

Non-Cracked Concrete

Characteristic Resistance

Thread Diameter			M08	M10	M12	M12D	M16	M20
N_{Rk}	Tensile Resistance	[kN]	8.3	12.8	17.9	17.9	26.5	30.0

Design Resistance

Thread Diameter			M08	M10	M12	M12D	M16	M20
N_{Rd}	Tensile Resistance	[kN]	4.6	7.1	11.9	11.9	14.7	16.7

Recommended Resistance

Thread Diameter			M08	M10	M12	M12D	M16	M20
N_{rec}	Tensile Resistance	[kN]	3.3	5.1	8.5	8.5	10.5	11.9

Includes Partial Safety Factor $\gamma = 1.4$ in the absence of national regulations and type of loading Data is for Static and Quasi Static Loads for a single anchor

Increasing Factors

Thread Diameter			M08	M10	M12	M12D	M16	M20
C30/3	[-]		1.22					
C 0/50	[-]		1.41					
C50/60	[-]		1.55					

When using increasing factors care must be taken not to exceed steel limits

Spacing & Edge Distances

Spacing	[mm]	$S_{cr,N,fi}$	-	-	200	200	260	-
Edge Distance	[mm]	$C_{cr,N,fi}$	-	-	100	100	130	-

The design method covers anchors with a fire attack from one side only. In the case of a fire attack from more than one side the edge distance shall be $\geq 300mm$

TDA anchor installation

